Part 7 Codes
Division 2 Specific Development Codes
Chapter 11 Changes to Ground Level and Creation of New Waterbodies

1.0 Purpose

This code seeks to ensure that changes to existing ground levels, including the creation of new waterbodies, do not adversely affect other properties or the general amenity of the locality in which the works are occurring. Ground level changes must be geotechnically and ecologically sound and, where a flood affected site is proposed to be developed, adequate measures will be taken to ensure that the development achieves no increase in risk of flood damage to life or to property for existing and proposed residential dwellings. The code also seeks to prevent any increase in runoff that might occur from development that would increase the rate of runoff or the magnitude of the flood volume that would run off during a flood emergency.

Best land management development practices, consistent with the principles of ecologically sustainable development, shall be employed.

This code also seeks to regulate development of land containing potential and actual acid sulfate soils so as to minimise the potential for environmental harm that may arise as a result of disturbances to these soils. In turn, this will minimise short and long term damage to corrodible infrastructure and natural ecosystems.

2.0 Application

2.1 This code applies to development indicated as code or impact assessable in the Table of Development in the domain or Local Area Plan (LAP) within which the development is proposed.

2.2 The provisions of this code apply to the life of any development, as well as to the construction period of the development. All information required to support an application, including engineering analyses, calculations, reports and drawings, shall be in accordance with **Planning Scheme Policy 11 – Land Development Guidelines**.

2.3 Performance Criteria PC1-PC20 apply to all code and impact assessable development subject to this code.

3.0 Development Provisions

Performance Criteria	Acceptable Solutions
Development that is Code Assessable or Impact Assessable	
Acid Sulfate Soils	
PC1 Development on land containing acid sulfate soils must not result in environmental harm or damage.	AS1.1.1 The land is at or below AHD 5 and is assessed for acid sulfate soil, in accordance with **Planning Scheme Policy 14 – Management of Activities Located Within Areas of Acid Sulfate Soils**. AS1.1.2 The land is at or below AHD 20 and excavation is proposed to levels below AHD 5 and the development is assessed for acid sulfate soil, in accordance with **Planning Scheme Policy 14 – Management of Activities Located Within Areas of Acid Sulfate Soils**.

Performance Criteria	Acceptable Solutions
Stormwater Drainage Considerations	
PC2 Development must not cause adverse stormwater drainage impacts on areas external and internal to the site.	AS2.1 The change to ground level maintains flood storage volume over the site for the 20 year ARI storm event. AS2.2 The change in ground level does not involve filling below Q100. AS2.3 The change in ground level does not impound or divert rainfall runoff.
Geotechnical Site Requirements	
PC3 All earthworks must be carried out in a location which is not at risk from: a) geotechnical instability at a nearby location; or b) geotechnical instability on the subject site.	AS3.1 The site is: a) located in areas free of compressible soils; b) designated as having very low to low slope instability. AS3.2 The site is not identified on **Overlay Map OM16 – Areas of Unstable Soils and Areas of Potential Land Slip Hazard** as an area with moderate, high and very high risk of instability.
PC4 All earthworks must be geotechnically stable, and must not decrease the geotechnical stability of the subject or adjacent sites.	AS4 The earthworks are undertaken in a manner which: a) involves a maximum cut and/or fill of less than 1 metre in height; b) involves batters no steeper than one in two.
Local Amenity, Noise and Emissions	
PC5 All activities carried out for or associated with changes to ground level must be conducted in a manner which ensures minimal disturbance to the amenity of the built environment.	AS5.1 The development involves work which has the potential to generate dust, and the following control measures are implemented: a) daily water spraying of exposed areas; b) provision of sealed roads; c) protective covering of exposed areas; d) the installation of wind barriers. AS5.2 All earthworks on the property are undertaken only during the hours of 6am to 6pm, Monday to Friday, and 7am to 6pm on Saturday. No work is undertaken on Sunday.
PC6 All work associated with any development must not create a negative impact upon the amenity of surrounding properties.	AS6.1 The cut and/or fill is retained, and the retaining wall is set back from any boundary at least one quarter of its height, with a minimum distance of 300mm, and: a) the site is located within a residential domain or adjacent to a site in a residential domain, and the retaining wall is stepped 1.5 metres for every 1.5 metres in height, and the terraces are landscaped; or b) the site is located within a non-residential domain, and the retaining wall is stepped 1.5 metres for every three metres in height, and the terraces are landscaped.

Performance Criteria	Acceptable Solutions
	AS6.2 The cut and/or fill is not retained, and the toe of any batter is no closer than 300mm from a boundary, and: a) the site is located within a residential domain or adjacent to a site in a residential domain, and batters along boundaries are no steeper than one in four and landscaped; or b) the site is located within a non-residential domain, and batters along boundaries are no steeper than 1 in 2 and landscaped.
Managing Contamination Risk	
PC7 Any filling or excavation must not result in the contamination of land.	AS7 The fill material is solid clean earth or clean inert material, free of organic, putrescible or refuse matter.
Geotechnical Fill Considerations	
PC8 Any materials used as fill must be able to adequately support future development of the land.	AS8 The proposed type, composition and source of fill material is geotechnically suitable, and is adequately compacted to support future development, in accordance with the requirements of **Planning Scheme Policy 11 – Land Development Guidelines**.
Hydraulic Considerations	
PC9 Any change to the level of the land must not have an adverse flooding impact on the flooding and drainage characteristics of external sites and/or premises.	AS9 As demonstrated by a hydraulic report prepared in accordance with Council's Hydraulic Report Requirements, the filling or excavation does not: a) cause ponding on the site or nearby land; b) increase flooding which adversely affects the safety or use of any land upstream and downstream; c) adversely affect the flow of water in any overland flow path; or otherwise d) contravene the intent of Constraint Code 8 - Flood Affected Areas.
PC10 Development upstream of areas with over floor flooding shall not increase the contribution of floodwater from the catchment. Over floor flooding occurs adjacent to: a) Currumbin Creek, downstream of weir near Stackpole Street; b) Tallebudgera Creek, downstream of Benardon Court; c) Mudgeeraba Creek, downstream of Berrigans Road; d) Nerang River, east of the Pacific Motorway; e) Coomera River, east of the Oxenford - Tamborine Road; f) Coombabah Creek, downstream of the Pacific Highway; g) Saltwater Creek, downstream of its crossing by Kopps Road.	AS10.1 Flood storage detention facilities are provided, where possible, on public land, of sufficient capacity to retain runoff such that the total peak runoff rate and volume released during the flood is not greater than would have been the case prior to development. AS10.2 A certified hydraulic study (and, if necessary, a hydrologic study) is prepared by a suitably qualified and experienced engineer to investigate the characteristics of both the undeveloped and developed site, and determines to the satisfaction of the Assessment Manager that a detention storage is not required, and a contribution is made by the developer to a Council sponsored community flood detention facility.
PC11 All development must ensure that there is no impact to local drainage regimes, such that no real damage is caused to any properties upstream or downstream of the site.	AS11 Stormwater drainage is provided in accordance with **Planning Scheme Policy 11 – Land Development Guidelines**.

Performance Criteria	Acceptable Solutions
Haulage Activity and Amenity	
PC12 All activities carried out for or associated with changes to ground level, including haulage activity, must be conducted in a manner which ensures minimal disturbance to the amenity of the built environment.	AS12.1 The development involves the transportation of fill material to and/or from the site, and the following measures are taken: a) loads are covered; b) spilled or wheel tracked material is immediately cleaned up from external roads; and c) heavy vehicle traffic is controlled. AS12.2 All waste material, including vegetation, is transported from the site and disposed of in an approved location. AS12.3 All haulage routes are approved by the Department of Transport for declared main roads, and by Council for all other roads. AS12.4 All haulage to and from the site is to be undertaken only during the hours of 6am to 6pm Monday to Friday and 7am to 6pm on Saturdays.
Treatment of Fill and Retaining Walls	
PC13 All work associated with any development must not create a negative impact upon the amenity of surrounding properties.	AS13.1 Filling material is placed on the development site and is maintained within the subject property, unless alternative arrangements are agreed by the affected neighbouring property owner. AS13.2 Any retaining walls which present to the street or adjoining land, have a finish that is compatible with surrounding development.
Water Quality	
PC14 Development must not have an adverse impact upon the City's ground water, waterways and wetlands.	AS14 Sediment and erosion control measures are implemented with the filling/excavation work.
PC15 The natural hydrological regimes of the site, including natural water quality, quantity and groundwater conditions, must be maintained and enhanced.	AS15.1 Sediment and erosion control measures are implemented with the filling/excavation work, in accordance with an approved Erosion and Sedimentation Control Program. AS15.2 The methods of stormwater run-off control and the design of the stormwater system does not create a point source discharge to waterbodies. AS15.3 A Stormwater Management Intent is prepared for the site which demonstrates that: a) stormwater is treated prior to discharge into any waterways; b) the velocity and quality of stormwater to be discharged into the waterways does not degrade the environmental values of the adjoining site.

Performance Criteria	Acceptable Solutions
Finished Surface Levels	
PC16 All development must have a finished surface level which is free draining and free from flooding.	AS16.1.1 The development is free draining and the surface gradient of the fill and/or excavated area is within the range 0.5% to 1.5%. OR AS16.1.2 The development includes steep surface gradients, which achieve integration with the surrounding topography, and the finished profile does not interrupt or materially change the surface water drainage, from or onto adjoining land.
Construction of New Waterbodies	
PC17 The new waterbodies must be suitable for their intended uses, and must maintain and enhance the water quality of existing waterbodies connecting to them.	AS17.1 A Water Quality Management Plan, which is prepared by a competent person, demonstrates that: a) the water quality of the new waterbodies is of the same or higher standard as the existing water quality; b) long term maintenance of the desired water quality is achieved; c) breeding potential of biting insects is minimised. AS17.2 The water body does not have deep, isolated holes that stratify and increase the possibility of algal blooms occurring, if that stratification breaks down. AS17.3 Pumping for the purposes of maintaining water quality is avoided. AS17.4 The water body is designed with a suitable outlet to ensure that flushing, if required, is possible.
PC18 Operational work must not cause geotechnical bank instability, erosion, bed scour or revetment wall collapse to adjacent waterbodies or to newly constructed waterbodies.	AS18 Edge treatment to the embankments of the waterbodies is in place during and after construction, in a manner certified by a competent person.
PC19 New waterbodies to be transferred to public ownership must have regard to public safety.	AS19 The water body includes: a) warning signs; b) fencing of areas where access is restricted, such as steep sided embankments or large drops.
Access to New Waterbodies	
PC20 Development incorporating new waterbodies must be designed to provide suitable access for maintenance of revetment walls and cleaning of the water body, including the removal of rubbish, reeds and surplus aquatic flora.	AS20 Access is provided to the owner/s of the waterbodies, by: a) dedication of land to the Crown, for this purpose; or b) existing access arrangements.